INDRC International Neurodegenerative Disorders Research Center

INDRC Conference 2022

Artificial Intelligence Solutions for Understanding and Treatment of Neurodegenerative Disorders

September 7 and 8, 2022 | Prague, Czech Republic

Under Auspices of

EU2022.CZ

MINISTRY OF REGIONAL DEVELOPMENT CZ

US embassy

PRAHA PRAGUE PRAGA PRAG

indrc.cz

VISIT…

The INDRC Conference 2022 is organized as an event within the Presidency of the Czech Republic in the Council of the EU 2022

Organizers

INDRC International Neurodegenerative Disorders Research Center

Co-Organizers

ALZHEON

CZECH INSTITUTE OF INFORMATICS ROBOTICS AND CYBERNETICS CTU IN PRAGUE

Under Auspices of

EU2022.CZ

MINISTRY OF REGIONAL DEVELOPMENT CZ

US embassy

PRAHA PRAGUE PRAGA PRAG

Platinum Partner

ZEBRA

Gold Partner

Deloitte.

Silver Partners

ČESKÁ spořitelna

ZDRAVOTNÍ POJIŠŤOVNA MINISTERSTVA VNITRA ČR 211

VOZP | VOJENSKÁ ZDRAVOTNÍ POJIŠŤOVNA

Media Partner

Česká televize

Dear friends and colleagues,

The search for effective treatments for Alzheimer's and other neurodegenerative disorders remains painfully slow due to the lack of understanding of the complex inter-relationship between brain structure and brain function, as well as limited knowledge of the precise pathogenic pathways that impair or destroy neurons and their connections. We identified this critical roadblock and founded the INDRC, International Neurodegenerative Disorders Research Center, to address these challenges by applying artificial intelligence and machine learning solutions to study function and information processing of healthy and diseased human brain, and help identify and validate new therapeutic interventions for neurodegenerative disorders.

It is my pleasure to welcome you at the INDRC Conference 2022: "Artificial Intelligence Solutions for Understanding and Treatment of Neurodegenerative Disorders", where we bring together the world's leading experts from neurosciences, clinical research, mathematics, biophysics, biochemistry, bioinformatics, AI, and computer science to bridge this gap and build computational models that combine knowledge and expertise to help address this major threat to humanity.

INDRC is a pioneering institute, and the first of its kind to combine biological sciences and medicine with big data and artificial intelligence approaches to study the function and information processing of human brain, with the goal of improving treatment and prevention of neurodegenerative disorders.

INDRC has experienced tremendous progress in the past year, during which we accepted several renowned international institutions and established initial research projects, the results of which we will share at our conference. INDRC Conference 2022 aims to advance our goal of merging and advancing the globally dispersed knowledge in science and technology, gathering the brightest minds around the world, who share the INDRC vision, to advance therapies with the greatest impact for patients.

I am delighted to welcome you to the city of my youthful dreams, the romantic, magical city of Prague. Come and enjoy the Welcome Reception at the Lord Mayor's Residence in the City Library, and the conference at the historical baroque Kaiserstein Palace in the world-renowned Lesser Quarter section of Prague, as we will strive together to address the major public health demand for improved understanding of the biology driving neurodegeneration and new interventions to treat these devastating diseases.

Welcome in Prague!

Martin Tolar, MD, PhD
Chairman of INDRC Executive Board

Vít Dočkal, PhD
INDRC Director

Conference goals

- To introduce the INDRC Institute and present plans for international research collaboration on opportunities and solutions brought by the application of AI in neurodegeneration
- To introduce breakthrough discoveries enabled by AI that address the pandemic of neurodegenerative disorders, in particular Alzheimer's Disease, and the global challenge of the aging population
- To reveal new trends in clinical research and computational technology such as multi-scale modeling, AI-empowered drug discovery, and analogue computing
- To gather the best people around the INDRC vision and invite prominent stakeholders, and world-leading experts in the field of neurodegeneration and industry to share the best practices and apply a common approach to the pandemic of neurodegenerative disorders

Program

INDRC closed meetings and Welcome Reception (upon Invitation)

September 7, 2022 | The Residence of the Mayor of Prague

15:00 **INDRC EB Meeting**

16:30 **INDRC Assembly Meeting**

18:00 **INDRC SAB Meeting**

19:00 **Welcome Reception Greetings**

- Jaromír Beránek, *Chairman for IT and Smart City Committee, City of Prague, Czech Republic*
- Ing. Jozef Síkela, *Minister of Industry and Trade of Czech Republic*

INDRC Conference – Plenary Sessions

September 8, 2022 | Kaiserštejnský palác, Malostranské náměstí 23/37, Praha 1

8:00-8:40 **Registration**

8:40-9:00 **Grand Opening**

- Ing. Jozef Síkela, *Minister of Industry and Trade of Czech Republic, Czech Republic*
- Roman Kraus, *Chairperson, Committee on Health, Senate of Czech Republic, Czech Republic*

9:00-9:20 **Welcome Keynotes**

- Martin Tolar, MD, PhD, *Founder, President & CEO of Alzheon, Inc., USA, Chairman of INDRC EB*
  History, Mission & Founding of INDRC Institute
- Vít Dočkal, PhD, *INDRC Director*
  INDRC Goals & Strategic Vision for R&D in Neurodegeneration

9:20-9:40 **Honorary Speech**

- Ara Khachaturian, PhD, *Executive Vice President of Campaign to Prevent Alzheimer's Disease, USA, Chairman of INDRC SAB*
  New Opportunities to Advance Global Brain Health Initiatives

9:40-11:00 **Keynote Presentations**

- Prof. Ing. Vladimir Marik, DrSc., *Scientific Director of CIIRC, Czech Republic, INDRC EB Member*
  Towards Artificial General Intelligence in Data Spaces
- John Hey, PhD, *Chief Scientific Officer at Alzheon, Inc., USA, INDRC EB Member*
  Alzheimer's as a Systems Neurodegenerative Brain Disease: Advances in Disease-Modifying Therapeutics and Application of Real-World and Big Data Tools
- Prof. Jacques Touchon, MD, PhD, *Montpellier School of Medicine, University of Montpellier, France*
  Interest of Brain-Gut Photobiomodulation Treatment in Alzheimer's Disease
- Sundar Subramaniam, *Chairman of IBCC Capital Management, Chairman of Knome & Sialix, General Partner of Higher Moment Capital, USA*
  Commercializing Academic Research – Current Trends

11:00-11:20 **Coffee Break & Networking**

→ Exhibition posters & booth of donors, industry sponsors, venture capital & private equity investors

11:20-12:40

→ Stanislav Fořt, PhD, *Research Scientist, Anthropic, Inc., USA*
What I Can Build, I Still Might Not Understand – Parallels Between Understanding Deep Neural Networks and the Brain

→ Jean-Marie Bouteiller, PhD, *Center for Neural Engineering & Institute for Technology and Medical Systems Innovation, University of Southern California, USA*
Breaching the multiscale complexity of neurodegenerative disorders using convergent and synergistic computational approaches

→ Prof. Jort Vijverberg, MD, PhD, *Medical Director of Alzheimer Center Amsterdam, Netherlands, INDRC EB Member*
Innovative Designs and Endpoints in Neurodegenerative Clinical Trials

→ Prof. Virend Somers, MD, PhD, *Mayo Clinic, USA*
Assoc. Prof. Tomáš Kára, MD, PhD, *Mayo Clinic, USA, Brno Municipal Hospital of Merciful Brothers*
Sleep and Heart-Brain Interaction – a Role for AI

12:40-14:00 **Networking Lunch**

→ Exhibition posters & booth of donors, industry sponsors, venture capital & private equity investors

14:00-15:40

→ Jakub Dvořáček, *Deputy Minister of Health of Czech Republic, Czech Republic*
Feedback and Opportunities with European Health Data Space

→ Petr Kocis, PhD, *Fmr. Global Head of Drug Discovery Capabilities & Sciences, Exploratory Chemistry, AstraZeneca, USA*
Navigating the Treacherous Brain Proteins Space with Artificial Intelligence Tools – the Good, the Bad and the Really Exciting

→ Prof. Ing. Josef Šivic, PhD, *CIIRC CTU, Czech Republic*

→ Prof. Jiří Damborský, PhD, *Director of Loschmidt Laboratories, Faculty of Science, Masaryk University, Czech Republic; ICRC, St. Anne's University Hospital*
The Novel Method of Combined In-Silico & In-Vitro Drug Development

→ Pavel Hroboň, MD, *Lead Partner at Advance Healthcare Management Institute, Czech Republic, INDRC EB Member*
The Role of AI in Advanced Patient Care

15:20-15:50 **Coffee Break & Networking**

15:50-16:40 **Panel Discussion:**
Igniting Breakthroughs – Sparks & Investments in Innovation Last Mile

→ Moderator: Martin Tolar, MD, PhD

→ Ondřej Bartoš, *General Partner at Credo Ventures, Czech Republic*

→ Stanislav Fořt, PhD, *Research Scientist at Anthropic, Inc., USA*

→ Sundar Subramaniam, *Chairman of IBCC Capital Management, Chairman of Knome and Sialix, GP at Higher Moment Capital, USA*

→ Prof. RNDr. Václav Snášel, CSc., *President of Technical University of Ostrava, Czech Republic*

→ Petr Šíma, *Partner at DEPO Ventures, Czech Republic*

16:40-17:40 **Conference Conclusions & Open Discussion**

→ Vít Dočkal, PhD, | Dr. Ara S. Khachaturian, PhD, | Martin Tolar, MD, PhD

17:40-21:00 **Dinner & Wine Tasting**

Venue

September 7, 2022
The Residence of the Mayor of Prague, Mariánské náměstí 98/1, Praha 1

How to get there

The nearest public transport stops are Mariánské náměstí (bus 194) – directly by the Residence;
or Staroměstská (metro A or tram station) - 2 minutes' walk through Kaprova -Valentinská – Platnéřská

From the airport
Public transport
- take BUS 119 from the Terminal 2 at the airport to Nádraží Veleslavín
- At Nádraží Veleslavín take Metro A to Staroměstská (direction Depo Hostivař)
- From Staroměstská station walk to the The Lord Mayor's Residence

TAXI
- You can order any city taxi available, i.e.
+420 216 216 112 (Taxi Terminal)
+420 222 111 000 (Taxi Praha)
+420 257 257 257 (City Taxi)

Uber/Liftago

From the Hotel Three Storks
(Valdštejnské náměstí 20/8, Praha 1)
1. You can use public transport from the Malostranské náměstí. Please walk straight ahead via Tomášská street to Malostranské náměstí (3 minutes' walk) and take Bus 194 to Mariánské náměstí.

2.Or you can walk via Valdštejnská street to Malostranská station (10 minutes' walk) and take Metro A (direction Depo Hostivař), Tram 18 or Tram 2 to station Staroměstská. From Staroměstská station it takes 2 minutes' walk to the Residence.

September 8, 2022
Kaiserštejnský palác, Malostranské náměstí 23/37, Praha 1

How to get there

The nearest transport stop is Malostranské náměstí (tram and bus station) which is just in front of the Kaiserstein Palace.

From the airport
Public transport
- take BUS 119 from the Terminal 2 at the airport to Nádraží Veleslavín
- At Nádraží Veleslavín take Metro A to Malostranská station (direction Depo Hostivař)
- From Malostranská station take Tram 22 to Malostranské náměstí.

TAXI
- You can order any city taxi available, i.e.:
+420 216 216 112 (Taxi Terminal)
+420 222 111 000 (Taxi Praha)
+420 257 257 257 (City Taxi)

Uber/Liftago

From the Hotel Three Storks
You can walk from the hotel (Valdštejnské náměstí 20/8, Praha 1) just straight ahead via Tomášská street to Malostranské náměstí.

Parking options
In case you need to park your car, the closest option is:
Rudolfinum Parking Garage (Alšovo nabřeží 12, +420 222 328 687)
Located close to the Vltava River, the parking charges CZK 60 per hour and CZK 660 for 24-hour parking.

Organizing Committee

Vít Dočkal, PhD

Vít Dočkal graduated in 2006 from the Faculty of Social Studies, Masaryk University with two doctoral degrees from the Department of Political Science, and International Relations and European Studies.

In the years of 2009-13 he had been leading the ICRC Project Management Office at St. Anne's University Hospital in Brno – a large R&D infrastructure funded by € 180M from the European Structural and Investment Funds (ESIF) and the state funds. Since 2013 he works as the professional project manager at the Czech Institute of Informatics, Robotics, and Cybernetics of the Czech Technical University in Prague (CIIRC CTU). As the head of the Project Management Office (2013 – 2021), he was responsible for the strategic project management agenda of € 100M+.

He led the project team during the preparation of the EDS Grant for the new CIIRC facility, OP RDE projects (Excellent Research Teams call of the ESIF-Operational Programme Research, Development and Education) and successful H2020 Teaming project RICAIP (Research and Innovation Centre on Advanced Industrial Production, € 50M). Vít Dočkal is the head of the CLAIRE Prague Office, closely involved in CLAIRE's engagement with industry and in supporting the AI ecosystem in Central and Eastern Europe. He is also co-founder of the start-up company TRIX Connections.

Ara S. Khachaturian, PhD

Ara S. Khachaturian, PhD is Chair and President of the National Biomedical Research Ethics Council (NBREC) a Nevada-based 501(c)(3) tax-exempt public charity that leads an international effort to improve clinical and public health research ethics. In addition, he serves as Executive Vice-President of the Campaign to Prevent Alzheimer's Disease 2020 (PAD2020), Maryland-based 501(c)(3) tax-exempt public charity that seeks resolution of important challenges facing efforts to combat Alzheimer's disease and other disorders affecting memory, movement and mood. In addition, he serves as the Executive Editor of Alzheimer's & Dementia: Journal of the Alzheimer's Association, Alzheimer's & Dementia: Diagnosis, Assessment and Disease Monitoring, and Alzheimer's & Dementia: Translation Research & Clinical Interventions.

Dr. Khachaturian is co-founder of Khachaturian and Associates, an international consulting group on matters related to healthy brain ageing. He has over twenty years of experience in the area of epidemiological and clinical research, including specialized experience in complex data analysis and modelling, public health policy, public finance, and government affairs.

Martin Tolar, MD, PhD

Dr. Tolar serves as Founder, President & CEO of Alzheon. He served as a President & CEO of Knome, Inc., as a President & CEO at NormOxys, Inc., as a Chief Scientific Officer and Chief Business Officer at CoMentis, Inc.. He held a variety of clinical development and business leadership positions at Pfizer, where he was instrumental in a wide range of business transactions, including acquisition of Rinat Neuroscience for $500 million in 2006, and directed programs through all stages of clinical development and FDA approval including NDA filings.

He served as an Assistant Professor in the Dept. of Neurology at Yale University School of Medicine. He trained in Neurology at the Boston Medical Center, received a Ph.D. in Neuroscience for his work on the role of apolipoprotein E in Alzheimer's disease.

He serves on business and scientific boards including the Alzheimer's Drug Discovery Foundation, the Alzheimer Foundation and Advance Healthcare Management Institute

He was recognized as one of the Top 100 Most Influential People in the world of drug development and manufacture by The Medicine Maker Magazine's Power Lists for 2016-19. In 2021, he received the Czech Laurels Award from the Czech Chamber of Commerce in recognition of his leadership in Alzheimer disease therapeutics, as well as clinical, scientific, and business projects in the Czech Republic built by Alzheon.

Pavel Hroboň, MD, MS

Physician and economist graduated from 2nd Medical Faculty of the Charles University in Prague and from School of Public Health at Harvard University in the USA.

Pavel Hroboň worked as Deputy Minister of Health responsible for health insurance, pharmaceuticals and medical devices. Previously, he was employed by the General Health Insurance Company of the Czech Republic as an advisor and director of strategy. He also gained experience as a consultant for McKinsey&Company. After graduation, he worked for several years as a physician specializing in the area of general internal medicine. He is the founder of the Advance Healthcare Management Institute and works at the Third Faculty of Medicine at Charles University, Czech Republic.

His work and research interest include health systems reforms, changes in funding and provision of health services required by the spread of chronic diseases, competition of payers and risk-adjustment systems, long-term care, reimbursement of pharmaceuticals, health technology assessment, the impact of reimbursement mechanisms on provider behaviour, and strategies of health insurers and providers.

About INDRC

Vision

INDRC is the world-leading distributed international non-profit research center for Alzheimer's disease and other neurodegenerative disorders. INDRC goal is to merge and advance the globally dispersed knowledge through fellowship programs of excellence, delivering outstanding independent research programs, building a world-class research community, and enabling technological and therapeutic innovations with genuine impact on society and humanity.

Value

Ethics & Humanity

- → Patient needs come first
- → Social responsibility

Independence

- → Independent research & autonomy
- → Economic vitality

Scientific Excellence

- → Fellowships / Mentorship of excellence
- → Interdisciplinary by design

Distributed Organization

- → Flexible organizational model
- → Growth pool of partnering nodes

> To achieve breakthroughs in the treatment & prevention of Alzheimer's disease and other neurodegenerative disorders.